

CLAIMS

1. A sound-absorbing structure, comprising:
 - a substantially flat support base;
 - 5 a substantially flat sound-absorbing material arranged substantially parallel to the support base; and a corrugated partition plate interposed between the support base and the sound-absorbing material, the corrugated partition plate having upper antinode portions opposed to the sound-absorbing material and lower antinode portions opposed to the support base;
 - 10 wherein the lower antinode portions of the corrugated partition plate are at least partially separated from the support base.
- 15 2. The sound-absorbing structure as claimed in claim 1, wherein parts of the lower antinode portions of the corrugated partition plate are supported via an elastic element by low-vibration portions of the support base.
- 20 3. A sound-absorbing unit comprising:
 - a corrugated partition plate having a first side and a second side opposite to the first side;
 - 25 a substantially flat sound-absorbing material provided on the first side of the corrugated partition plate; and at least one second partition plate configured to partition air spaces defined between the sound-absorbing material and the corrugated partition plate.
- 30 4. The sound-absorbing unit as claimed in claim 3, wherein the second partition plate extends in a

direction substantially perpendicular to a direction in which antinode portions of the corrugated partition plate extend.

5 5. The sound-absorbing unit as claimed in claim 3, further comprising a second sound-absorbing material provided on the second side of the corrugated partition plate.

10 6. The sound-absorbing unit as claimed in claim 3, wherein the second partition plate is provided only on the first side of the corrugated partition plate.

15 7. The sound-absorbing unit as claimed in claim 3, wherein the corrugated partition plate includes a wave pattern whose phase is shifted at an intersection of the corrugated partition plate and the second partition plate.

20 8. The sound-absorbing unit as claimed in claim 3, wherein the corrugated partition plate includes a wave pattern whose amplitude is varied at an intersection of the corrugated partition plate and the second partition plate.

25 9. The sound-absorbing unit as claimed in claim 3, wherein the corrugated partition plate includes a sine wave pattern.

30 10. The sound-absorbing unit as claimed in claim 3, wherein the corrugated partition plate includes a rectangular wave pattern.

11. The sound-absorbing unit as claimed in

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claim 3, wherein the corrugated partition plate includes wave patterns with different frequencies.

12. The sound-absorbing unit as claimed in
5 claim 3, wherein the corrugated partition plate includes wave patterns with different amplitudes.

13 (amended). A sound-absorbing unit comprising:

10 a partition plate having a plurality of recesses formed in a first side thereof, each of said recesses having an opening with a predetermined shape on the first side; and

15 a sound-absorbing material provided on the first side of the partition plate to cover the openings of the recesses,

wherein each of the recesses has a cross-sectional area that gradually varies with a depth of the recess.

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14 (canceled).

15. The sound-absorbing unit as claimed in claims 3 or 13, wherein the thickness of air spaces behind 25 the sound-absorbing material is set to odd multiples of one-fourth of the wavelength of sound waves of target frequencies..

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